

HEAT STRESS EXERCISE

Nellie J. Brown, M.S., C.I.H.

“Let’s go over to Celsius’s place – it’s only 36 degrees over there.”
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Part A

On Tuesday, Charlie is running a payloader backfilling all the trenches where the leachate collection system had been installed around the composting site’s perimeter. After a cool, rainy spring was finally followed by sunshine, the sudden hot temperature had him sweating heavily by mid-afternoon. When Charlie had stopped for lunch, the temperature was already 89 F.

His tyvek suit seemed to make it worse. He was also becoming concerned about the dust level in the cab, especially since his respirator seems to be frequently sliding out of place on his sweaty face. His legs feel achy. A laborer was supposed to bring him some fresh drinking water, but Charlie hasn’t seen him for the last hour and he’s really thirsty.

He begins to feel a little light-headed and to notice that his vision seems a little blurry. He pauses for a few minutes to see if the problem goes away and he thinks he feels a little better. Before he starts work again, he checks his pulse and finds that it is 110 bpm.

When he is startled by the squawk of a call coming in on his radio, he decides to tell his supervisor that he could really use some drinking water. About 5 minutes later, the laborer finally arrives with the water and notices that Charlie seems pale and shaky.

1. Does Charlie have any symptoms of heat stress?
2. What risk factors for heat stress do you see here?
3. What hazard controls in a heat stress program would reduce the risk factors of Charlie’s job?

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Part B

It’s Friday, the fourth day of the heat wave, and Charlie has been stocking extra drinking water in the payload for the last three days, just in case there was a repeat of Tuesday’s experience. He has also been wearing a cooling sweatband which seems to help a little bit.

When Charlie stopped for lunch, the temperature was 91 F. His wife had packed a big piece of leftover lasagna for his lunch along with a generous piece of fresh strawberry pie and, enjoying it thoroughly, he ate every bite.

By mid-afternoon, the backfilling looks almost complete to Charlie and he is looking forward to the weekend, when his supervisor comes by and signals him to stop work: “Charlie, are you feeling OK?”

“Sure, I’m almost done with the last part of this trench.”

“Actually, you’re not – you’ve been working on the same area for the last 15 minutes and you weren’t responding to any signals from the surveyor. He came and told me. I want you to sit and rest for a while and drink at least two cups of water right now. Fred will be here in a minute to drive you to the site office.”

4. Does Charlie continue to have any symptoms of heat stress?
5. What risk factors for heat stress do you see here?
6. What additional hazard controls in a heat stress program would reduce the risk factors of Charlie’s job?

COLD STRESS EXERCISE

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“So much for Doppler radar – there wasn’t a word in the weather report about an ice age.”

Part A

The old backhoe has no cab and was not intended to be used this late into the year, but no other machine was available to do what was supposed to be “just a quick little job.” As the morning progressed, what started out as a sunny day quickly became cloudy and dull. The wind began to pick up, driving large snowflakes into Jerry’s face.

When his work took him beneath the power lines, Jerry became tense. He began gripping the controls more tightly; he wanted to be sure that he was repeating his motions exactly – hoping that he had enough clearance. His feet are starting to feel numb -- as is his rear end.

1. Does Jerry have any symptoms of cold stress?
2. What risk factors for cold stress do you see here?
3. What hazard controls would reduce the risk factors of Jerry’s job?

COLD STRESS EXERCISE

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“So much for Doppler radar – there wasn’t a word in the weather report about an ice age.”

Part B

Jerry had a sandwich and a bowl of soup for lunch. He kept his insulated coveralls zipped up to stay warm. As he prepares to return to the job, his supervisor Ted tells him that, by tomorrow, he will have the new backhoe (with enclosed and heated cab) on the worksite. Jerry complains that he could really use a laborer to keep watch for clearance of the power lines: “I can hardly see the lines with snow blowing in my face.” Ted promises to assign him someone.

Jerry continues digging, but quickly becomes chilled and begins to shiver. When the laborer arrives, he finds Jerry slumped over the controls, shaking and mumbling to himself. When he tries to pull Jerry off the backhoe to take him back to the site office, Jerry murmurs: “Go away and let me sleep!”

4. Does Jerry continue to have any symptoms of cold stress?
5. What risk factors for cold stress do you see here?
6. What additional hazard controls would reduce the risk factors of Jerry’s job?